What is claimed is:

1. A transmission electron microscope comprising:

an electron beam source,

a deflector which is provided in front of said electron beam source and deflects an electron beam from said electron beam source in different directions to form a first electron beam and a second electron beam, which are incident onto a given portion of a sample by different angles, and

a three-dimensional displaying device which combines a first image by said first electron beam and a second image by said second electron beam and displays said portion of said sample three-dimensionally.

2. The transmission electron device as defined in claim 1, wherein said deflector comprises a deflection plate provided in front of said electron beam source.

3. The transmission electron microscope as defined in claim 2, wherein said first electron beam is incident onto said sample by an angle within a range of one to five degrees in a right side from a normal line of said sample, and said second electron beam is incident onto said sample by an angle within a range of one to five degrees in a left side from said normal line of said sample.

4. The transmission electron microscope as defined in claim 2, further comprising an imaging device which is provided in front of said electron beam source and said deflection plate, and photographs said first image by said first electron beam and said second image by said second electron beam.

5. The transmission electron microscope as defined in claim 4, wherein irradiation times of said first electron beam and said second electron beam for said sample are synchronized with an operation signal of said imaging device.

6. The transmission electron microscope as defined in claim 2, further comprising an irradiation lens in between said deflector and said sample.

7. The transmission electron microscope as defined in claim 2, further comprising an irradiation lens in between said electron beam source and said deflector.

8. The transmission electron microscope as defined in claim 1, wherein said deflector comprises an electron beam trapezoidal prism composed of a pair of filaments and a pair of earth electrodes provided in an outside of said filaments.

9. The transmission electron microscope as defined in claim 8, wherein said first electron beam is incident onto said sample by an angle within a range of one to five degrees in a right side from a normal line of said sample, and said second electron beam is incident onto said sample by an angle within a range of one to five degrees in a left side from said normal line of said sample.

10. The transmission electron microscope as defined in claim 8, further comprising an image combiner which is provided in front of said electron beam source and said electron beam trapezoidal prism, and forms a first electron beam hologram from said first image by said first electron beam and a third image by a third electron beam not through said sample and a second electron beam hologram from said second image by said second electron beam and said third image by said third electron beam.

11. The transmission electron microscope as defined in claim 10, further comprising an imaging device which is provided in front of said image combiner and photographs said first electron beam hologram and said second electron beam hologram.

12. The transmission electron microscope as defined in claim 11, wherein irradiation times of said first electron beam and said second electron beam for said sample are synchronized with an operation signal of said imaging device.

13. The transmission electron microscope as defined in claim 10, further comprising a separative and regenerative circuit for separating and regenerating said first electron beam hologram and said second electron beam hologram.

14. A three-dimensional observing method comprising the steps of:

emitting an electron beam from an electron beam source,

deflecting said electron beam by a deflector provided in front of said electron beam source to form a first electron beam and a second electron beam which are incident onto a given portion of a sample at different angles, and

combining a first image and a second image of said portion of said sample by said first electron beam and said second electron beam to display an image of said portion of said sample three-dimensionally.

15. The three-dimensional observing method as defined in claim 14, wherein said deflector comprises a deflection plate, whereby said first electron beam and said second electron beam are formed by switching a polarity of

voltage to be applied to said deflection plate.

16. The three-dimensional observing method as defined in claim 15, wherein said first electron beam is incident onto said sample by an angle within a range of one to five degrees in a right side from a normal line of said sample, and said second electron beam is incident onto said sample by an angle within a range of one to five degrees in a left side from said normal line of said sample.

17. The three-dimensional observing method as defined in claim 16, further comprising the step of photographing said first image by said first electron beam and said second image by said second electron beam with an imaging device provided in front of said electron beam source and said deflection plate.

18. The three-dimensional observing method as defined in claim 16, further comprising the step of synchronizing irradiation times of said first electron beam and said second electron beam for said sample with an operation signal of said imaging device.

19. The three-dimensional observing method as defined in claim 14, wherein said deflector comprises an electron beam trapezoidal prism composed of a pair of filaments and a pair of earth electrodes provided in an outside of said filaments, whereby said first electron beam and said second electron beam are formed by switching a polarity of voltage to be applied to said filaments.

20. The three-dimensional observing method as defined in claim 19, wherein said first electron beam is incident onto said sample by an angle within a range of one to five degrees in a right side from a normal line of said sample, and said second electron beam is incident onto said sample by an angle within a range of one to five degrees in a left side from said normal line of said sample.

21. The three-dimensional observing method as defined in claim 19, further comprising the step of forming, with an image combiner provided in front of said electron beam source and said electron beam trapezoidal prism, a first electron beam hologram from said first image by said first electron beam and a third image by a third electron beam not through said sample and a second electron beam hologram from said second image by said second electron beam and said third image by said third electron beam.

22. The three-dimensional observing method as defined in claim 21, further comprising the step of photographing said first electron beam hologram

and said second electron beam hologram with an imaging device provided in front of said image combiner.

23. The three-dimensional observing method as defined in claim 22, further comprising the step of synchronizing irradiation times of said first electron beam and said second electron beam for said sample with an operation signal of said imaging device.

24. The three-dimensional observing method as defined in claim 21, wherein said first electron beam hologram and said second electron beam hologram are separated and regenerated with a separative and regenerative circuit, and displayed three-dimensionally at said three-dimensional displaying device.